



North Carolina Department of Transportation
Transportation Program Management Unit - Value Management
Innovative Technologies and Products Awareness Report
February 1, 2018

PRODUCT HIGHLIGHT – Hybrid Composite Culvert Repair System



HCCR being installed on an existing culvert

The Hybrid Composite Culvert Repair System (HCCR) was developed by the Kenway Corporation in partnership with the Advanced Structures & Composites Center at the University of Maine. HCCR was approved for use in February 2017 as a new option for rehabilitating corrugated metal pipe culverts that are showing signs of corrosion and have a minimum diameter of three feet. These types of culverts are installed under NCDOT roadways at small streams and tributary crossings. For HCCR to be used, culverts must be structurally sound.

HCCR is pre-engineered and manufactured in sectional panels using a durable and flexible composite liner. The liner is then manually attached to the existing steel culvert through stainless steel fasteners and grouted in place for stiffness and strength. Due to its light-weight and sectional design, minimal heavy equipment is needed which creates a smaller construction footprint. This smaller footprint can reduce cost, alleviate traffic impacts, and shorten installation time. The installation method minimizes the environmental impact by reducing the amount of time that the stream needs to be diverted. HCCR closely conforms to the existing pipe, which provides minimal impact on the culvert invert elevation and provides a long-term repair without the need for a redesign. Fish weirs can be added to the liner, if the design calls for them to be installed. HCCR composition is safe and environmentally friendly and does not negatively impact the stream environment. More information may be found at <http://kenway.com/products/culvert-rehabilitation-systems/>.

PRODUCT INNOVATION – The Sentinel

The Sentinel Portable Traffic Signal, engineered and manufactured by John Thomas Inc. (JTI), is designed for use in work zones to increase the safety of both the work zone and the workers. It has an interchangeable design, which allows it to be used on nearly any surface in multiple types of work zones. It can be mounted to a moveable cart, concrete barrier, towable trailer, or truck bed. The Sentinel has optional accessories enabling it to be customized for more specific needs such as pedestrian signal functionality and traffic sensor actuation. Other models include the Automated Flagger Assistance Device (AFAD) and Driveway Assistance Device (DAD). The AFAD allows flaggers to be located outside of the traffic lane and operate the device remotely away from traffic. The DAD is used in between a temporary signal system and helps control traffic entering a two-lane road from a driveway or low volume street to improve the safety of work zones with intersections. This product is currently under review for the Approved Product List.



Moveable Cart



Truck-Mounted



AFAD

